Cotton/Soybean Insect Newsletter

Volume 16, Issue #10 Edisto Research & Education Center in Blackville, SC 2 July 2021

Pest Patrol Alerts

The information contained herein each issue is available via text alerts that direct users to online recordings. I will update the short message often for at least as long as the newsletter runs. After a new message is posted, a text message is sent to alert users that I have recorded a new update. Users can subscribe for text message alerts for my updates in two easy steps. Step one: register by texting **pestpat7** to 97063. Step two: reply to the confirmation text you receive by texting the letter "y" to complete your registration. Pest Patrol Alerts are sponsored by Syngenta.

Updates on Twitter

When noteworthy events happen the in the field, I will be sending them out quickly via Twitter. If you want to follow those quick updates, follow me at **@bugdocisin** on Twitter.

News from Around the State

Charles Davis, county agent in Calhoun County, reported that "aphids are on the upswing across the county. Huge numbers with abundant honeydew in spots (left photo below). Lower levels most other places. I have been seeing some square damage, but think it is mostly related to broadcast fertilizer injury (center photo below). Haven't seen much else other than beneficials in the field." Charles also stated that herbicides were "not controlling golf-ball weed." Talk about out of bounds. LOL



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Scouting Workshops and Field Days

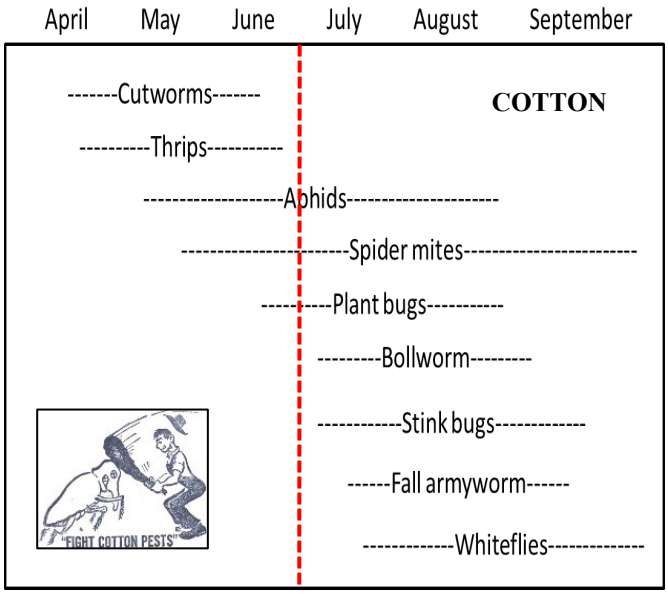
We will offer several in-field, in-person workshops devoted to scouting for insect issues in cotton and soybeans in 2021. These scouting workshops will likely be on 28 July (Manning or Sumter area), 29 July (Cameron), and on 30 July (Edisto REC in Blackville), so please hold the date for your area, if you would like to attend. We will also have an in-person field day here at the Edisto REC on 2 September 2021, with at least row crops (cotton, soybeans, peanuts, corn, grain sorghum, etc.) covered. Stay tuned for details on those events.

Cotton Situation

As of 27 June 2021, the USDA NASS South Carolina Statistical Office estimated that about 32% of the crop is squaring, compared with 22% last week, 31% at this time last year, and 34% for the 5-year average. About 1% of the crop is setting bolls, compared with 0% last week, 2% at this time last year, and 2% for the 5-year average. The conditions of the crop were 15% excellent, 52% good, 27% fair, 4% poor, and 2% very poor. These are observed/perceived state-wide averages.

Cotton Insects

Our current position on the timeline chart has us facing aphids, spider mites, and plant bugs, and that is where we find ourselves again this week. Aphids are becoming more abundant (cupped leaves below due to aphids), as observations and reports mentioned them more this week. As I have stated before, I am not too concerned with aphids in cotton, unless the infestation occurs on young cotton plants (pre-bloom), populations of aphids are extremely high and relatively uniform across a field, and the aphids show no signs of dying due to the fungal organism *Neozygites fresenii*. Cotton can almost



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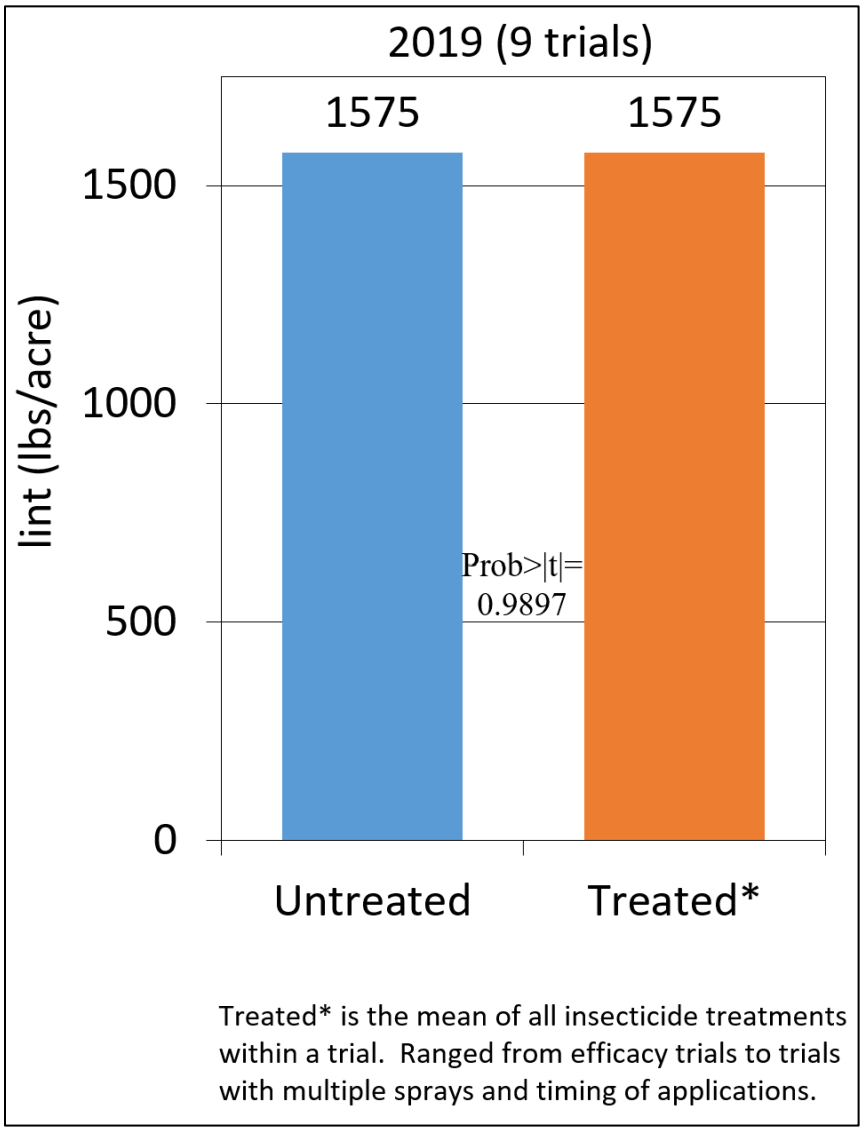
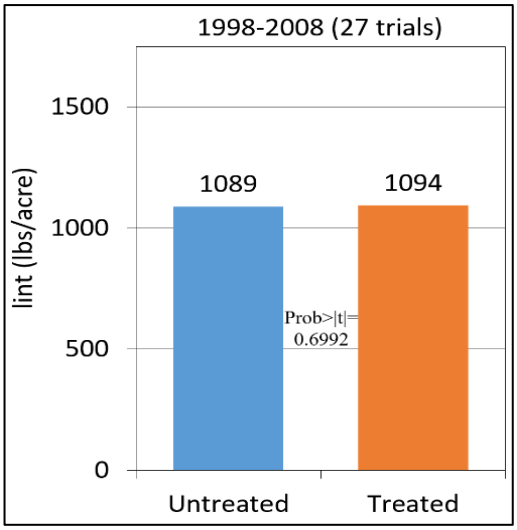
always stand some stress from aphids. My colleagues in the Southeast and I put out numerous trials in 2019 where we compared various insecticides for control of cotton aphid, and the results (below) clearly showed that yields were not increased as a result of spraying for aphids. Yields in sprayed plots were identical to those in untreated plots. Costs of spraying would have made spraying for aphids a money-losing effort, at least in these 9 trials. Similar data sets show

Cotton aphids under leaf. The orange, football-shaped eggs are lady beetle eggs.



Treated* is the mean of all insecticide treatments within a trial. Ranged from efficacy trials to trials with multiple sprays and timing of applications.

the same trend. For example, from 1998 to 2008, in 27 trials conducted and summarized by Dr. Phillip Roberts at UGA, yields in sprayed and unsprayed plots were also not statistically different.



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There is more in the newsletter last week about aphids. I consider them mostly as food for natural enemies that can build up and help us out later on bollworm and stink bugs. I am seeing some signs of what looks like Cotton Leafroll Dwarf Virus (CLRDV) that is transmitted by infected cotton aphids. Below are some photos I took this week of crinkled, off-color leaves, some of the symptoms associated with infection by CLRDV. Some of the other symptoms include leaf bronzing, red stems, stunted plants, stacked nodes, and vertical extension of terminals. So, the symptoms can be extremely variable, most likely due to environmental conditions, varietal response (some varieties are likely more sensitive than others), etc.

We have already sampled plants at 30 days after emergence (DAE) to assay for CLRDV, and we will sample additional plants for the virus on 60, 90, and 120 DAE. Dr. Hehe Wang is leading the detection efforts in her laboratory at Edisto REC. Last year, about 22% of our plant samples showed positive for CLRDV at 30 DAE. At 60 DAE, about 34% of plant samples were positive for CLRDV. At 90 DAE, over 98% of our cotton plant samples tested positive for CLRDV, but at 120 DAE, we were only able to detect CLRDV in about 25%

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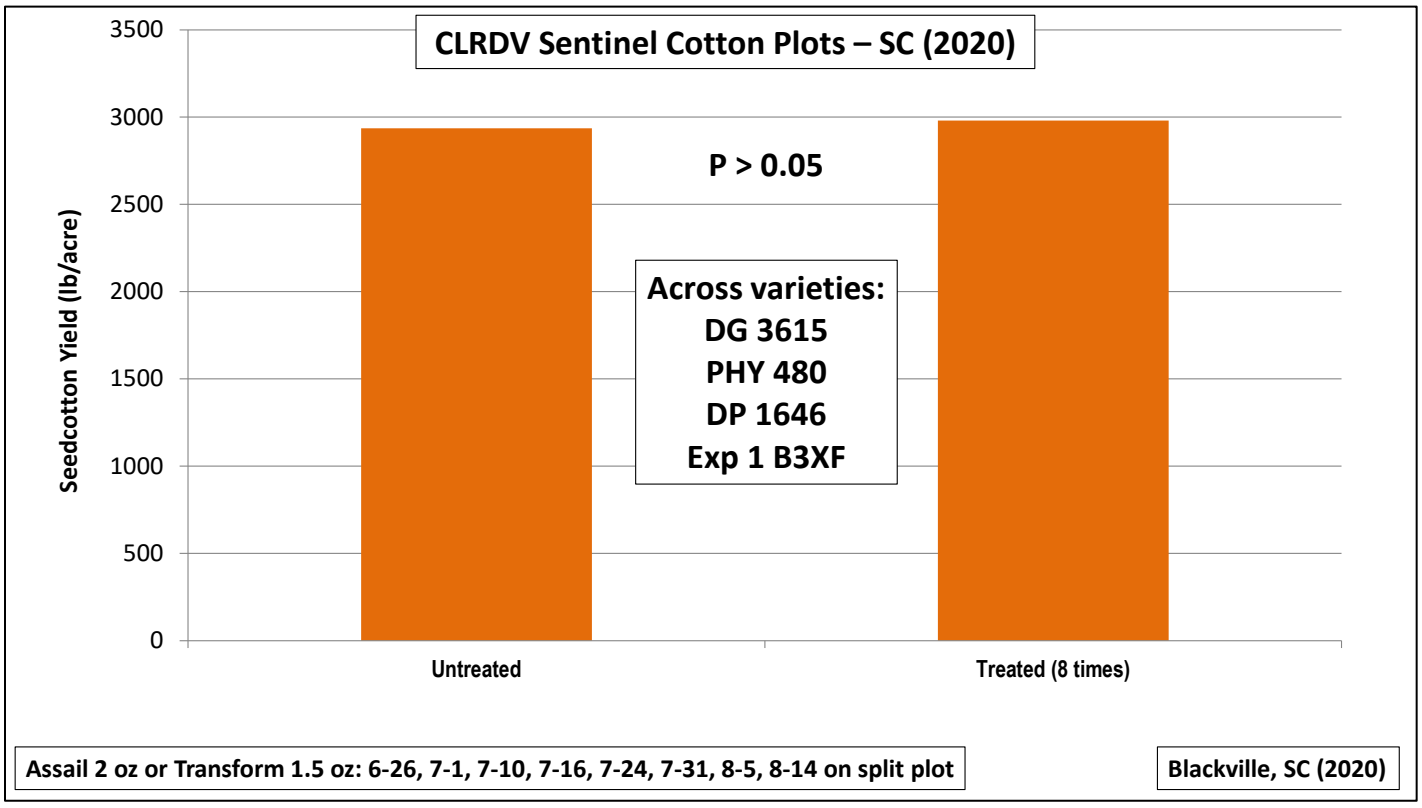
of our sampled plants. So, the virus was found broadly in our test with 4 varieties, even with half of the plots protected from aphids with 8 sprays of insecticide. Furthermore, there were no differences in yield between plots left untreated and plots protected from aphids. The bottom line is that aphid sprays usually don't pay for themselves, even in the context of broad infection from CLRDV. This is what we see so far.



Switching gears to talk about spider mites and plant bugs – we have been getting some nice scattered but heavy rain showers lately. Yesterday (Thursday), it was pouring rain here at Edisto REC. You can certainly worry less about spider mites, if you get a frog-strangling rain on your cotton fields, as heavy rain removes mites and seemingly kills many of them. However, if your fields miss the scattered showers and have issues with spider mites, I put a section in the newsletter last week that covers control options for spider mites.

As much of our crop is squaring and getting close to blooming, plant bugs, predominantly tarnished plant bugs, are of most concern in that window. Most of what I have observed over the years seems to indicate that the 2 weeks before and after first bloom are the most critical 4 weeks for plant bugs. During that window, you should be monitoring square retention and scouting for plant bugs with a sweep net (pre-bloom) or black drop cloth (post-bloom). I recommend checking for the presence or absence of first-

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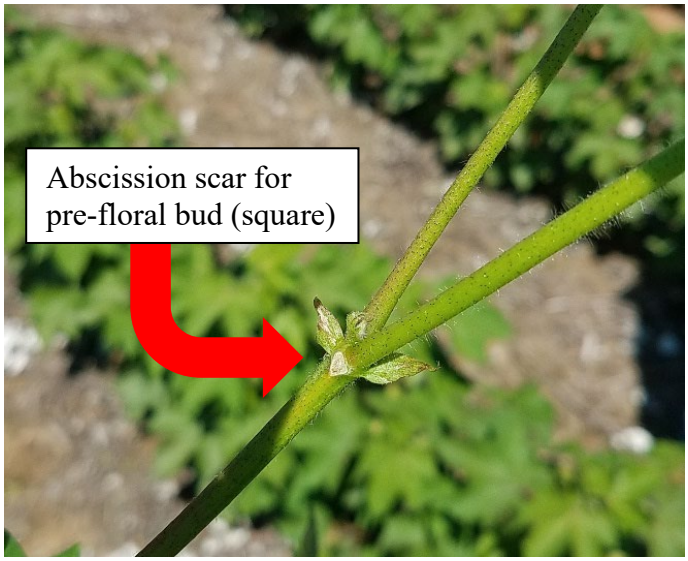
position squares on the top 3-5 nodes. If you do this on a number of plants, you can get a good idea of square abscission and retention with some simple math. Look for squares and for scars where squares should be on those first positions. Do not use square retention counts by themselves to make treatment decisions, as levels of physiological shed are variable based on environment (abiotic stress), intrinsic reproductive capacity of cotton varieties, insect injury (biotic stress), and other factors. You need to know if levels of plant bugs exceed treatment thresholds (8 per 100 sweeps or roughly 1 per 10 sweeps to keep the math simple for pre-bloom sampling; or 3 per 5-6 rowft using a drop cloth post-bloom). If plant bug density meets or exceeds these values AND square retention is below 75%, you probably need to treat for plant bugs. Our previous survey efforts have indicated that roughly 10-20% of the fields we have sampled for plant bugs in SC had treatable populations of plant bugs. As mentioned in previous issues of the newsletter, plant bugs will include several species, but the tarnished plant bug (TPB), *Lygus lineolaris*, will be the species of most concern. I provided photos of plant bug species in previous issues of the newsletter, but here are a couple of more photos of adult TPB.



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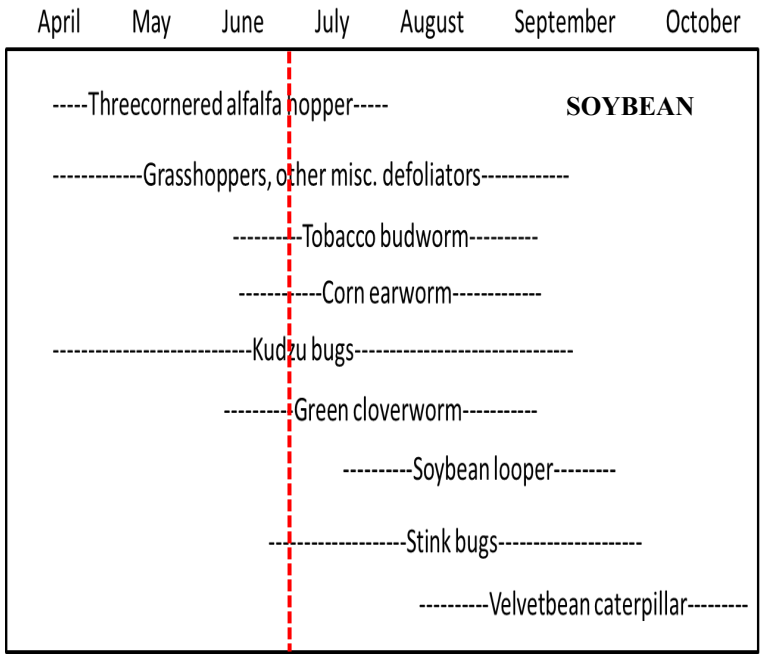
Soybean Situation

As of 27 June 2021, the USDA NASS South Carolina Statistical Office estimated that about 94% of the crop has been planted, compared with 93% the previous week, 88% at this time last year, and 90% for the 5-year average. About 90% of the crop has emerged, compared with 87% the previous week, 74% at this time last year, and 80% for the 5-year average. About 6% of the crop is blooming, compared with 0% the previous week, 3% at this time last year, and 3% for the 5-year average. The conditions of the crop were 11% excellent, 68% good, 16% fair, 4% poor, and 1% very poor. These are observed/perceived state-wide averages.



Soybean Insects

We are still waiting on most of the soybean crop to grow and develop issues with insects. As you know, most of the problems to this point have been caused by grasshoppers. I am still seeing a lot of reproduction, with numerous immature grasshoppers in young soybeans and cotton fields. This guy was hanging out in cotton this week. Remember, we can still stand up to 30% defoliation in soybeans prior to bloom without a statistical loss of yield. That does drop to 15% once blooming starts. As covered previously, you need to have a definitive problem with grasshoppers in order to pull the trigger on insecticide sprays. Also, be aware that control of large-bodied grasshoppers is not going to be good. You simply cannot get enough poison into them to get good control. Use heavy rates of a pyrethroid, acephate, or chlorpyrifos for adults, and consider using Dimilin at 2 fl oz/acre where you have noticeable reproduction and many grasshopper nymphs (no wings) jumping around. Again, the rains we recently received will result in hatchouts of grasshopper immatures that will likely cause another round of problems.

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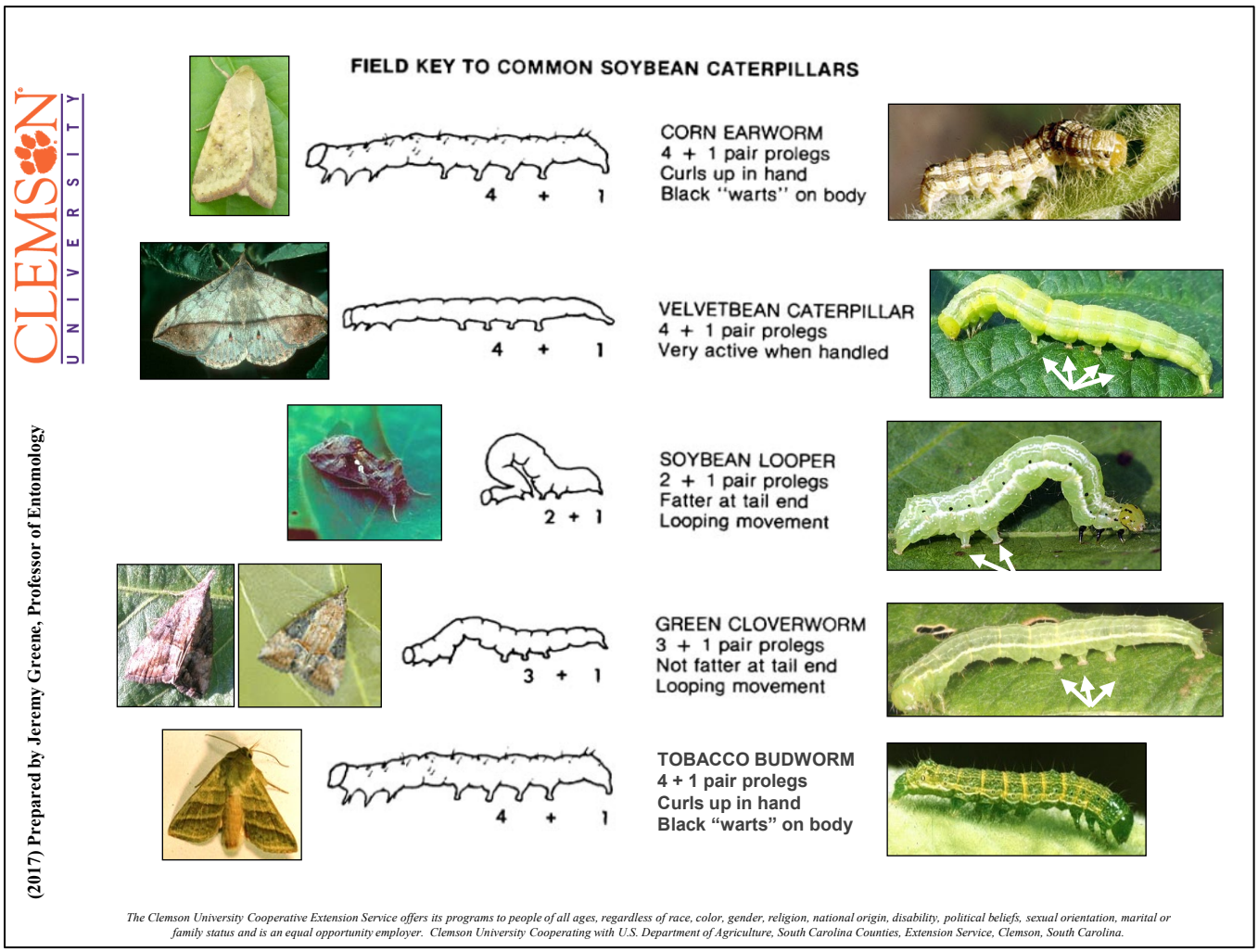
We are also moving into the part of the season when moth activity will start to pick up, and eggs will yield caterpillar pests on soybeans. So, I will start stressing the importance of being able to identify the adults flying around in fields. Here is a chart to study for moth and caterpillar identification.



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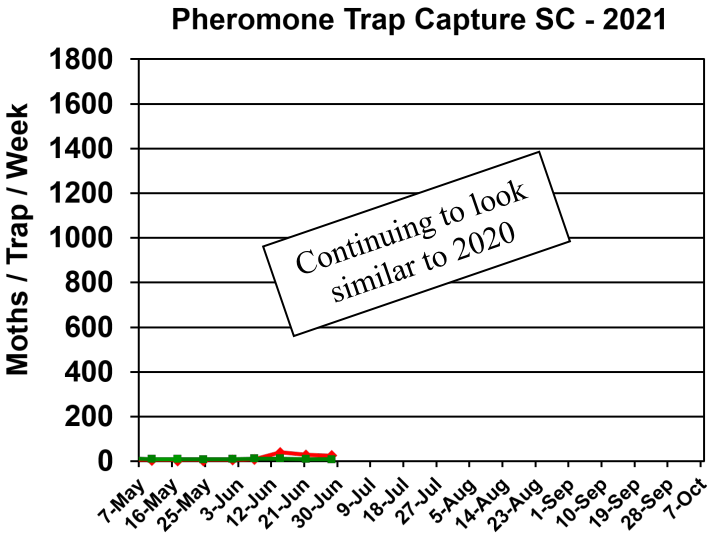
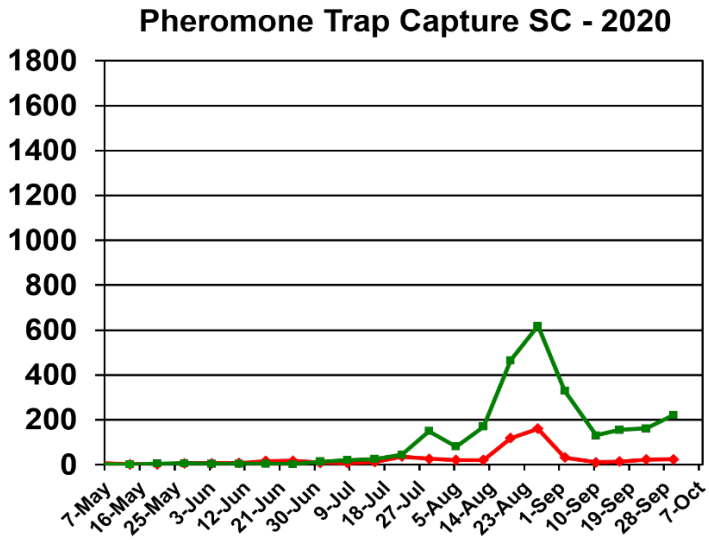
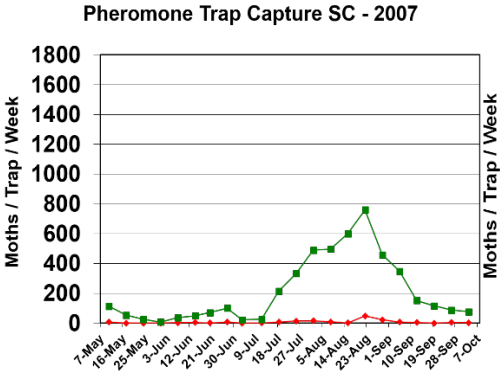
Bollworm & Tobacco Budworm

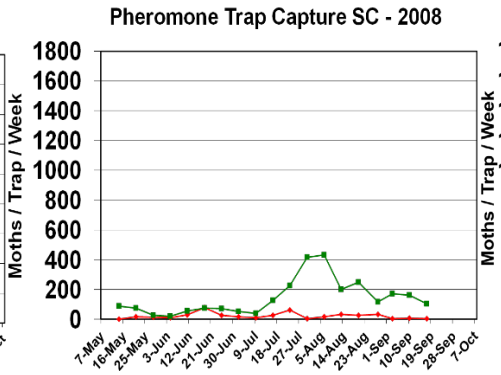
Captures of bollworm (BW) and tobacco budworm (TBW) moths in pheromone traps at EREC this season are shown below, as are the captures from 2007-2020 for reference. Tobacco budworm continues to be important for our soybean acres and for any acres of non-Bt cotton. I provide these data as a measure of moth presence and activity in our local area near my research plots. The numbers are not necessarily representative of the species throughout the state.

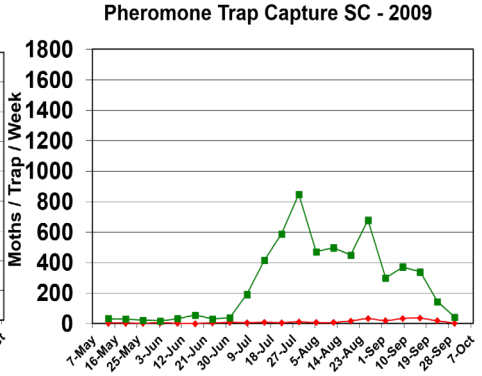




Trap data from 2007-2019 are shown below for reference to other years of trapping data from EREC:







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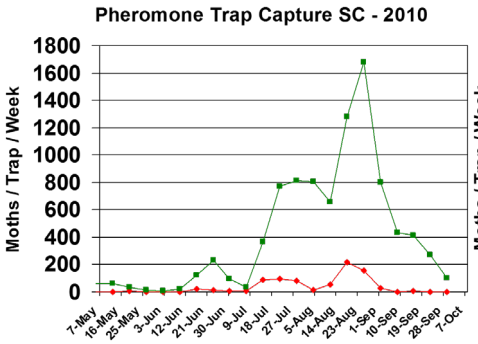

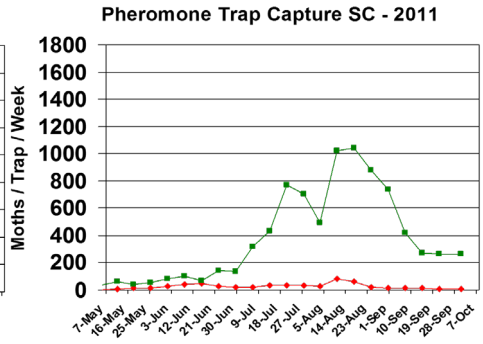

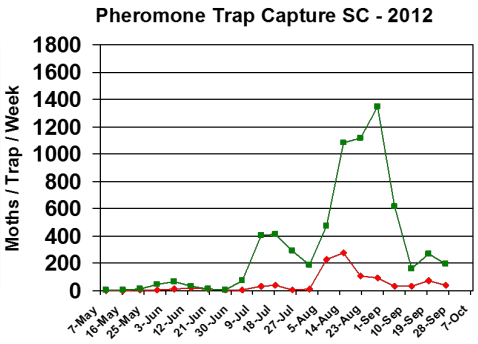

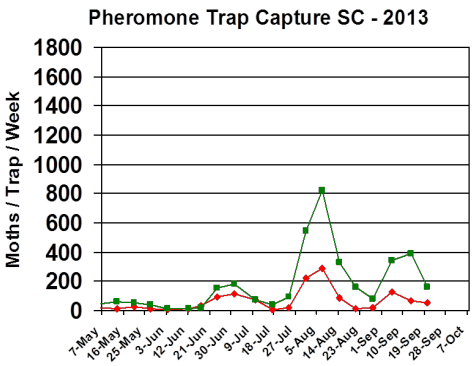

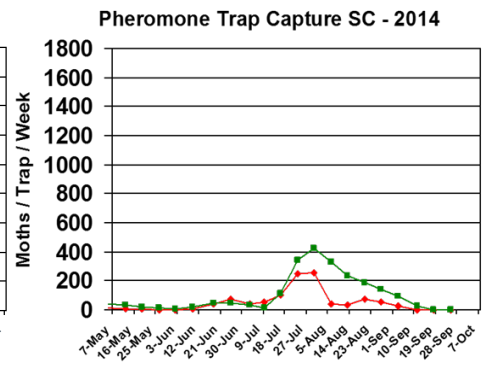

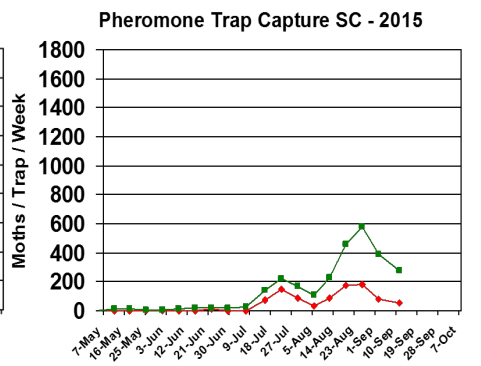

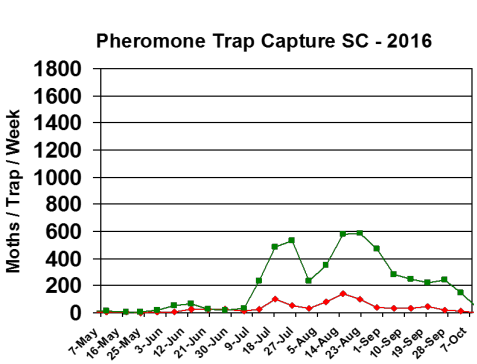

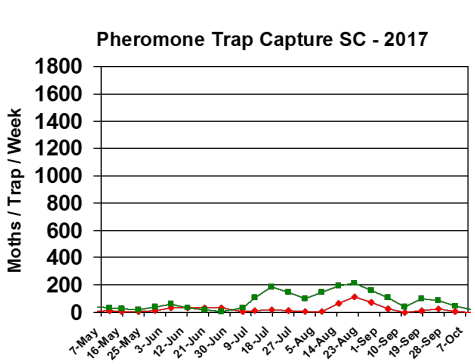

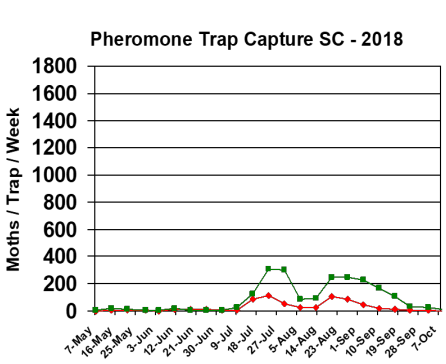

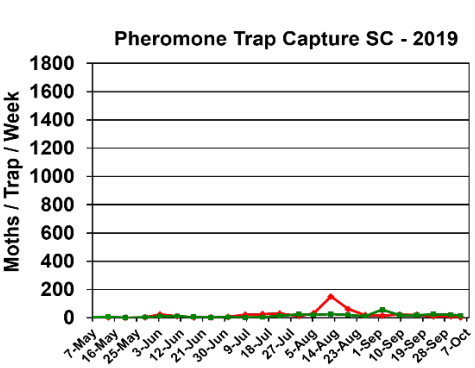

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Pest Management Handbook – 2021

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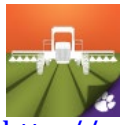
https://www.clemson.edu/extension/agronomy/pest%20management%20handbook.html

Free Mobile Apps: "Calibrate My Sprayer" and "Mix My Sprayer"



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For historical cotton/soybean insect newsletters:
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Sincerely,

Jeremy K. Greene, Ph.D.
Professor of Entomology

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